

**WHAT IS CLAIMED IS:**

- 1 1. A method for processing a message for establishing a label-switched path,  
2 the method comprising:
  - 3 a) determining whether or not the message includes extended information;
  - 4 b) if the message does not include extended information, determining,  
5 using a first part of the message and routing information, whether or not to  
6 generate a further message to signal the label-switched path; and
  - 7 c) if the message does include extended information, determining, using a  
8 second part of the message and routing information, whether or nor to generate  
9 a further message to signal the label-switched path.
- 1 2. The method of claim 1, wherein the message is a label-mapping message.  
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- 1 3. The method of claim 1, wherein the message includes a FEC-label  
2 association.
- 1 4. The method of claim 1, wherein the message includes a label distribution  
2 protocol label-mapping.
- 1 5. The method of claim 1, wherein the routing information was determined using  
2 an interior gateway protocol.
- 1 6. The method of claim 1, wherein the extended information includes resolution  
2 next hop information.
- 1 7. The method of claim 6, wherein the resolution next hop information includes a  
2 host address or prefix.
- 1 8. The method of claim 7, wherein the method is performed by a first node in a  
2 network domain, and

3            wherein the host address or prefix is of a second node in the network  
4 domain.

1    9. The method of claim 8, wherein the second node is an autonomous system  
2 border router.

1    10. The method of claim 8, wherein the first node runs an interior gateway  
2 protocol for generating routing information in the first node, and  
3            wherein the routing information includes an entry for the second node.

1    11. The method of claim 1, wherein the first part of the message includes an  
2 address or prefix of a node.

1    12. The method of claim 11, wherein the node is an ingress node of the  
2 label-switched path.

1    13. The method of claim 12, wherein the method is performed by a second node  
2 in a first network domain, and  
3            wherein the ingress node is in a second network domain.

1    14. A machine-readable storage device including a message comprising:  
2            a) a first field including a label;  
3            b) a second field including forwarding equivalency class information; and  
4            c) a third field including label-switched path signaling resolution  
5 information.

1    15. The machine-readable storage device of claim 14, wherein the  
2 label-switched path resolution information includes an address or prefix of a first  
3 node.

1 16. The machine-readable storage device of claim 15, wherein the forwarding  
2 equivalency class information includes an address or prefix of a second node in a  
3 remote network domain, and  
4 wherein the first node is in a local network domain.

1 17. The machine-readable storage device of claim 16, wherein the first node is  
2 an autonomous system border router.

1 18. The machine-readable storage device of claim 15, wherein the first node is  
2 an autonomous system border router.

1 19. The machine-readable storage device of claim 14, wherein the message is a  
2 label mapping message.

1 20. The machine-readable storage device of claim 19, wherein the  
2 label-switched path resolution information includes an address or prefix of a first  
3 node.

1 21. The machine-readable storage device of claim 20, wherein the forwarding  
2 equivalency class information includes an address or prefix of a second node in a  
3 remote network domain, and  
4 wherein the first node is in a local network domain.

1 22. The machine-readable storage device of claim 21, wherein the first node is  
2 an autonomous system border router.

1 23. The machine-readable storage device of claim 20, wherein the first node is  
2 an autonomous system border router.

1 24. The machine-readable storage device of claim 14, wherein the message is a  
2 label distribution protocol label mapping message.

1 25. Elements for processing a message for establishing a label-switched path  
2 comprising:  
3 a) means for determining whether or not the message includes extended  
4 information;  
5 b) means for determining, using a first part of the message and routing  
6 information, whether or not to generate a further message to signal the  
7 label-switched path if the message does not include extended information; and  
8 c) means for determining, using a second part of the message and  
9 routing information, whether or nor to generate a further message to signal the  
10 label-switched path if the message does include extended information.

1 26. The elements of claim 25, wherein the message is a label-mapping  
2 message.

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1 27. The elements of claim 25, wherein the message includes a FEC-label  
2 association.

1 28. The elements of claim 25, wherein the message includes a label distribution  
2 protocol label-mapping.

1 29. The elements of claim 25, wherein the routing information was determined  
2 using an interior gateway protocol.

1 30. The elements of claim 25, wherein the extended information includes  
2 resolution next hop information.

1 31. The elements of claim 30, wherein the resolution next hop information  
2 includes a host address or prefix.

1 32. The elements of claim 31, wherein the elements are included in a first node  
2 in a network domain, and

3            wherein the host address or prefix is of a second node in the network  
4 domain.

1    33. The elements of claim 32, wherein the second node is an autonomous  
2 system border router.

1    34. The elements of claim 32, wherein the first node runs an interior gateway  
2 protocol for generating routing information in the first node, and  
3            wherein the routing information includes an entry for the second node.

1    35. The elements of claim 25, wherein the first part of the message includes an  
2 address or prefix of a node.

1    36. The elements of claim 35, wherein the node is an ingress node of the  
2 label-switched path.

1    37. The elements of claim 36, wherein the elements are included in a second  
2 node in a first network domain, and  
3            wherein the ingress node is in a second network domain.